

Paris Branch
Recreational Use Attainability Analysis

March 2005

Prepared for:
UAA Review Committee
Water Quality Monitoring & Assessment Section
Water Protection Program
MISSOURI DEPARTMENT OF NATURAL RESOURCES
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I. Project Background

Paris Branch, a classified third-order tributary to the N. Fork Cuivre River, was evaluated for existing and attainable Whole Body Contact Recreation (WBCR) uses in October 2004. Using assessment methods prescribed by Missouri Department of Natural Resources guidance, MEC Water Resources, Inc. (MEC) staff conclude that WBCR is neither an existing or attainable use within surveyed reaches.

At the request of the Home Builders Association of Greater St. Louis (HBA), MEC assessed classified reaches of Paris Branch for existing, potential, and attainable WBCR uses. The assessment described herein is expected to meet or exceed the requirements set forth by the Missouri Department of Natural Resources for conducting a Recreational Use Attainability Analysis (UAA) (MDNR 2004).

II. Study Area

A three mile segment of Paris Branch (Figure 1) is a Class C water of the state and a 3rd order tributary to the North Fork Cuivre River (Cook 2000). Uses currently designated for Paris Branch include: Protection of Warm-Water Aquatic Life, Livestock and Wildlife Watering, Human Health Fish Consumption, and Secondary Contact Recreation. Draining a 4.7 mi.² watershed in west-central Lincoln County, Paris Branch is predominated by cool season grassland (44%), row-crop agriculture (38%), and upland deciduous forest (17%) according to 1993 Thematic Mapper imagery. The Paris Branch watershed is contained within the Cuivre River Basin (8 digit HUC 07110008) and State assigned water body identification number is 0176.

III. Methods and Materials

Procedures developed by MDNR for conducting Recreational UAAs (MDNR 2004) were the primary reference for this study. In summary, MDNR UAA procedures contain the minimum elements listed below:

- Survey should generally be conducted during the regulatory recreational season (April 1 to October 31);
- Surveys should be conducted during baseflow conditions;
- Recreational assessments should be performed at a minimum of three publicly accessible sites along the stream reach of interest;
- All sites shall be marked on a 1:24,000 USGS topographic map
- A photographic record of each site that includes upstream and downstream views, in addition to any evidence of observed or potential recreational uses; and
- Interviews of persons present during the time of survey and nearby-residents.

In addition to MDNR minimum requirements, MEC staff collected the following data within an assessment reach having a total length of approximately twenty times bankfull width:

- Stream hydrogeometry (width, depth, velocity, bank slope);
- Riffle, pool, run (stream mesotype) composition; and
- Riparian corridor characteristics

Hydrogeometry measurements were obtained along three equally spaced cross-sections within each mesotype unless one mesotype dominated the entire upstream or downstream reach, e.g. one large bridge scour pool. Five equally spaced cross-sections were taken for situations where a single mesotype dominated the assessment reach. Streamflow measurements were obtained using a Price AA 'Pygmy' velocity meter and calibrated wading rod. Bank slopes were measured using a Suunto brand clinometer.

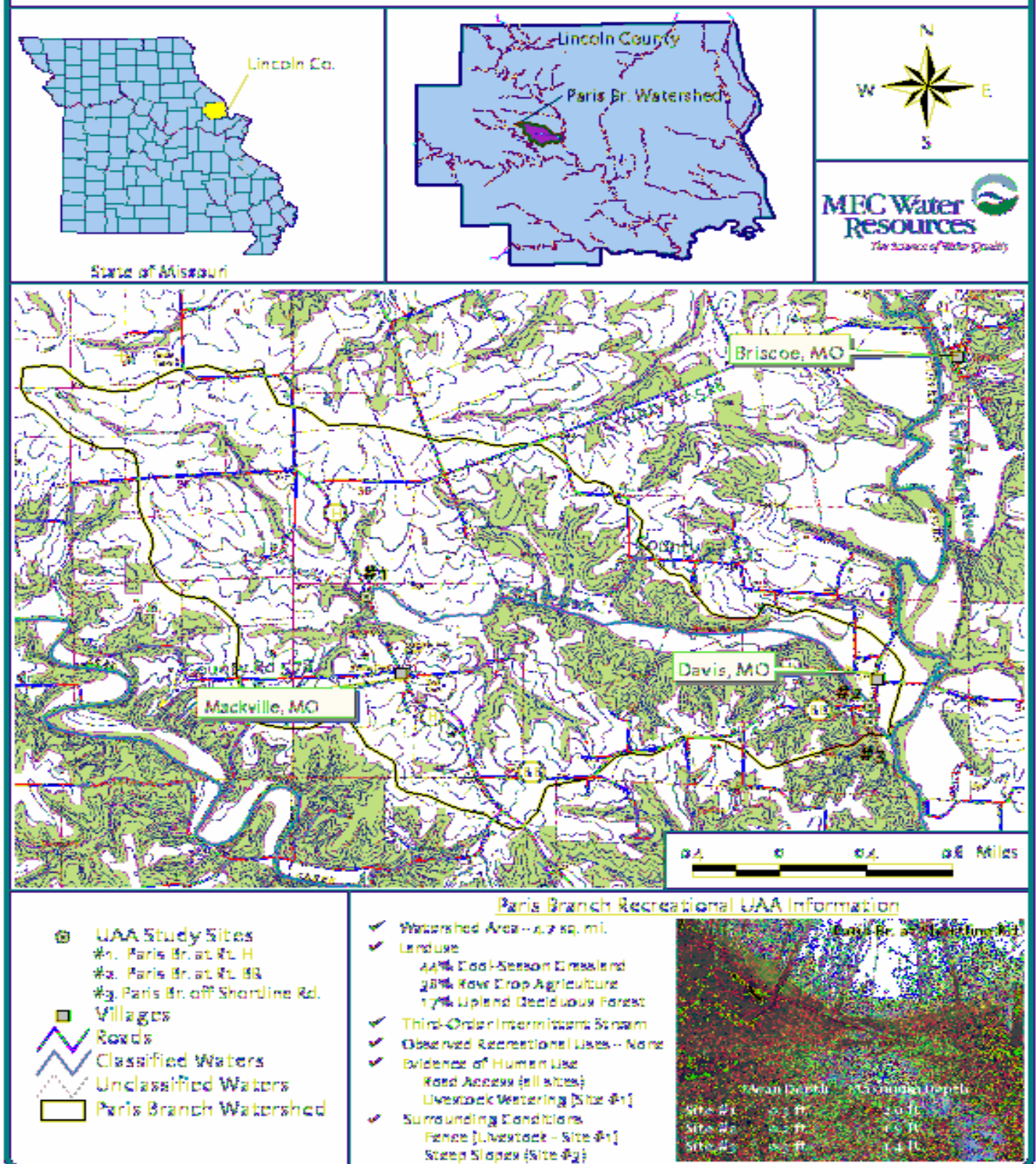
IV. Results & Discussion

The following discussion is provided to aid decision-makers in evaluating appropriate existing or potential recreational uses for Paris Branch. Although summarized in the following paragraphs, raw data collected during the survey is contained in Appendix A along with field data sheets required by MDNR UAA protocols. Additional data collected during the survey are included in Appendix B.

Streamflow and Weather Conditions

Three sites (Figure 1) within classified sections of Paris Branch were assessed on October 25, 2004 using methods described in section IV; Route H bridge (39.0672, -91.06424), Route BB bridge (39.0556, -91.02025), and the Shortline Road access (39.0545, -91.0197). Surveys were conducted during baseflow conditions as evidenced by precipitation data from USGS gage station 05514500 Cuivre River near Troy, MO and streamflow measurements taken in Paris Branch the day of the survey (Tables 1 & 2). Hydrologic conditions observed during the survey are believed representative due to a relatively small watershed area (4.7 mi.²) that limits periods of sustained baseflow, and the definition of Class C waters provided in State regulations.

Figure 1. Paris Branch UAA Study Area and Sites



Weather conditions during the time of the study were stable with the last measured rainfall occurring ten days prior to the evaluation. Air temperatures were approximately 78°F and skies were clear and sunny. Weather conditions are not believed to have precluded or limited recreational opportunities during the survey.

Table 1. Two-Week Antecedent Rainfall from USGS
05514500 Cuivre River near Troy, MO

Date	Precipitation Total
(M/D/Y)	(inches)
10/10/2004	0.0
10/11/2004	0.0
10/12/2004	1.0
10/13/2004	0.0
10/14/2004	0.4
10/15/2004	0.0
10/16/2004	0.0
10/17/2004	0.0
10/18/2004	0.0
10/19/2004	0.0
10/20/2004	0.0
10/21/2004	0.0
10/22/2004	0.0
10/23/2004	0.0
10/24/2004	0.0
10/25/2004	0.0

Table 2. Observed Streamflow Conditions During
Paris Branch Recreational UAA Survey

Date	Site	Streamflow
(M/D/Y)	(name)	(cfs)
10/25/2004	Rt. H	<0.1
10/25/2004	Rt. BB	<0.1
10/25/2004	Shortline Rd.	0.4

Site Characterization

Sites surveyed as part of this study represent the only publicly accessible areas along classified segments of Paris Branch. Study results are discussed for each site to provide a description of differences between assessment reaches.

Site #1. Lincoln County Route H Bridge Crossing

The landscape near the Highway H bridge crossing is an open grazing pasture with a fence (Figure 2) across the stream channel. Livestock were observed grazing near the stream during the survey. Banks are gently sloping and are vegetated with grasses and forbs (Figure 3). Riparian areas are composed of cool-season grasses associated with the grazing pasture. Channel substrate was a mud and clay mixture. Limited algae deposits within pooled reaches may deter human use.

Figure 2. Paris Br. at Rt. H (Downstream View) Figure 3. Paris Br. at Rt. H (Upstream View)



Mean depth along a 120 ft. assessment reach was 0.3 ft as determined from fifteen transects (Appendix B). The maximum depth observed at this location was 2.0 feet in a small pool upstream of the road access. There was no visible flow within the stream channel.

Livestock watering was the only observed or evidenced human use at this site. Fences impede public access to much of the assessment reach. No individuals were seen or found to be available for interviews near the Route H bridge during the survey.

MEC staff believe that Whole Body Contact Recreation (WBCR) is neither an existing or an attainable use at this site based on limited access to the stream imposed by fences, absence of observed recreational uses, and low flow shallow conditions.

Site #2. Lincoln County Route BB Bridge Crossing

The road crossing at Route BB is located near the small village of Davis, MO. Stream banks near the road are gently sloping and relatively easy to access (Figures 4 & 5). Riparian areas are wide and open and primarily vegetated by the upland deciduous forest complex. The stream channel was observed to be a mixture of cobble and sand. Mean depth along a 600 ft. assessment reach was 0.2 ft as determined from eight transects (Appendix B). The maximum depth observed at this location was 1.9 feet in a small pool downstream of the road access. There was no visible flow within the stream channel.

There were no observed or evidenced human uses at this site. No individuals were seen or found to be available for interviews near the Route BB bridge or the village of Davis during the survey. MEC staff believe that WBCR is neither an existing or an attainable use at this site based on absence of observed recreational uses and low flow shallow conditions.

Figure 4. Paris Br. at Rt. BB (Downstream View)



Figure 5. Paris Br. at Rt. BB (Upstream View)



Site #3. Shortline Road Access

Shortline Road is a small gravel road off Route BB that leads up to a private drive near the confluence of Paris branch and the North Fork Cuivre River. Stream banks are steep, sparsely vegetated, and covered with rocks and brush (Figures 6 & 7). Riparian area is greater than 100 feet wide on both sides of the stream and consists of large, mature trees. Stream substrate was approximately 80% cobble, 10% sand, and 10% silt.

Mean depth along a 500 ft. assessment reach was 0.3 ft as determined from seventeen transects (Appendix B). The maximum depth observed at this location was 1.4 feet in a small pool upstream of the road access. Observed streamflow was 0.42 cfs and a mean velocity of 0.38 fps.

There were no observed or evidenced human uses at this site. No individuals were seen or found to be available for interviews near the Shortline Rd. access during the survey. MEC staff believe that WBCR is neither an existing or an attainable use at this site based on absence of observed recreational uses and low flow shallow conditions.

Figure 6. Paris Br. at Shortline (Downstream View) Figure 7. Paris Br. at Shortline (Upstream View)



V. Use Recommendation

Surveyed reaches of Paris Branch do not currently support WBCR uses due to the absence of observed or evidenced human uses and limited access resultant from fences and/or steep slopes. Furthermore, WBCR uses in Paris Branch are not attainable according to depth criteria associated with ephemeral, intermittent, or low flow conditions set forth in MDNR UAA guidance.

VI. References

Cook, R. 2000. Code of State Regulations; Missouri Water Quality Standards, Title 10, Division 20, Chapter 7.

Missouri Department of Natural Resources. 2004. Recreational Use Attainability Analysis Protocol. Water Protection Program, Jefferson City, MO.

Appendix A

MDNR Field Data Sheets

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

Water Body Name: (from USGS 7.5' quad)	Paris Branch
8-digit HUC:	07110008
Missouri WBID #:	176
County:	Lincoln
Upstream Legal Description:	Mouth
Downstream Legal Description:	31, 50 N, 1 W
Upstream Coordinates: (UGS 84, ddd.ddddd)	39.0672, -91.06424
Downstream Coordinates: (UGS 84, ddd.ddddd)	39.0545, -91.0197
Discharger Facility Name(s):	
Discharger Permit Number(s):	
Number of Sites Evaluated:	3
Name of Surveyor and Telephone Number:	David Carani 573-443-4100
Organization:	MEC Water Resources, Inc
Position:	Environmental Specialist

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: _____

Date: _____

10/25/2004

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: <u>176</u>		Site Location Description:	
Site GPS Coordinates: <u>39.05598 91.02025</u>		<u>Paris Branch @ Highway B/B</u>	
Date & Time: <u>10/25/04 1500</u>		Facility Name:	
Personnel: <u>David Carani</u>		Permit Number:	
Current Weather Conditions: <u>78° sunny</u>		Weather Conditions for Past 7 days:	
Photo Ids: Upstream: <u>38</u>	Downstream: <u>39</u>	Other: <u>40</u>	

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

no rec. uses observed

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>gently sloping banks</u>	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads <u>Highway B/B</u>	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two – Data Sheet B for WBID # 176 :

Stream Morphology:

Upstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>17.2</u>	Length (ft): <u>174</u>	Avg. Depth (ft): <u>.58</u>	Max. Depth (ft): <u>1.9</u>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Estimated (ft ³ /sec): <u> </u>	

Downstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>15.3</u>	Length (ft): <u>87.6</u>	Avg. Depth (ft): <u>.41</u>	Max. Depth (ft): <u>.9</u>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Estimated (ft ³ /sec): <u> </u>	

Substrate*: (These values should add up to 100%.)

<u>90</u> % Cobble	<u> </u> % Gravel	<u>10</u> % Sand	<u> </u> % Silt	<u> </u> % Mud/Clay	<u> </u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>none observed</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 10/25/04

Organization: MFC Water Resources, Inc. Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: <u>176</u>		Site Location Description:	
Site GPS Coordinates: <u>39.06720 91.06424</u>		<u>Paris Branch @ Highway H</u>	
Date & Time: <u>10/25/04 1400</u>		Facility Name:	
Personnel: <u>David Curani</u>		Permit Number:	
Current Weather Conditions: <u>78° sunny</u>		Weather Conditions for Past 7 days:	
Photo Ids: Upstream: <u>35</u>	Downstream: <u>33</u>	Other: <u>34, 36, 37</u>	

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

no rec. uses observed

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads <u>Highway H</u>	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two – Data Sheet B for WBID # 176 :

Stream Morphology:

Upstream View Physical Dimensions:

<input checked="" type="checkbox"/> Riffle	Width (ft): <u>1.2</u>	Length (ft): <u>4.8</u>	Avg. Depth (ft): <u>.03</u>	Max. Depth (ft): <u>.1</u>
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>8</u>	Length (ft): <u>20.4</u>	Avg. Depth (ft): <u>.79</u>	Max. Depth (ft): <u>2.0</u>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft ³ /sec): _____		

Downstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft):	Length (ft): <u>92.4</u>	Avg. Depth (ft): <u>.22</u>	Max. Depth (ft): <u>.62</u>
<input checked="" type="checkbox"/> Pool	Width (ft):	Length (ft): <u>2.4</u>	Avg. Depth (ft): <u>.21</u>	Max. Depth (ft): <u>.51</u>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft ³ /sec): _____		

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	<u>100</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>minimal algal growth</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

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I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 10/25/04

Organization: MEC Water Resources, Inc. Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: <u>176</u>		Site Location Description:	
Site GPS Coordinates: <u>39.05449 91.01979</u>		<u>Paris Branch @ Shortline Rd</u>	
Date & Time: <u>10/25/04 1545</u>		Facility Name:	
Personnel: <u>David Curani</u>		Permit Number:	
Current Weather Conditions: <u>78° sunny</u>		Weather Conditions for Past 7 days:	
Photo Ids: Upstream: <u>42</u>	Downstream: <u>43</u>	Other: <u>44, 45</u>	

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

none observed

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads <u>Shortline Rd</u>	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two – Data Sheet B for WBID # 176 :

Stream Morphology:

Upstream View Physical Dimensions:

<input checked="" type="checkbox"/> Riffle	Width (ft): <u>3.5</u>	Length (ft): <u>75</u>	Avg. Depth (ft): <u>.10</u>	Max. Depth (ft): <u>.22</u>
<input checked="" type="checkbox"/> Run	Width (ft): <u>10.6</u>	Length (ft): <u>50</u>	Avg. Depth (ft): <u>.40</u>	Max. Depth (ft): <u>1.21</u>
<input checked="" type="checkbox"/> Pool	Width (ft): <u>15.3</u>	Length (ft): <u>125</u>	Avg. Depth (ft): <u>.33</u>	Max. Depth (ft): <u>1.40</u>
<input checked="" type="checkbox"/> Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft ³ /sec): <u>.42</u>		

Downstream View Physical Dimensions:

<input checked="" type="checkbox"/> Riffle	Width (ft): <u>4.7</u>	Length (ft): <u>105</u>	Avg. Depth (ft): <u>.15</u>	Max. Depth (ft): <u>.50</u>
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>16</u>	Length (ft): <u>145</u>	Avg. Depth (ft): <u>.33</u>	Max. Depth (ft): <u>.92</u>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft ³ /sec): <u> </u>		

Substrate*: (These values should add up to 100%.)

<u>80</u> % Cobble	% Gravel	<u>10</u> % Sand	<u>10</u> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

none observed

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 10/25/04Organization: MEC Water Resources, Inc Position: Environmental Specialist

Appendix B

Stream Morphology Information

Appendix B. Stream Morphology Information

Paris Branch at Route H

Length of Assessment Reach (ft.)		120			
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)	
1	Pool	20.4	0.6	0.88	
2	Pool		1.0	2	
3	Pool		0.78	1.1	
4	Riffle	4.8	0.03	0.1	
5	Riffle		0.04	0.1	
6	Riffle		0.02	0.05	
7	Run	34.8	0.27	0.61	
8	Run		0.29	0.62	
9	Run		0.3	0.52	
10	Pool	2.4	0.21	0.42	
11	Pool		0.27	0.51	
12	Pool		0.14	0.35	
13	Run	57.6	0.11	0.32	
14	Run		0.17	0.35	
15	Run		0.15	0.44	
		Maximum Observed Depth (ft.)			2.0
		Mean Assessment Reach Depth (ft.)			0.3

Paris Branch at Route BB

Length of Assessment Reach (ft.)		600		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Pool	174	0.78	1.2
2	Pool		0.7	1.22
3	Pool		0.55	0.9
4	Pool		0.2	0.41
5	Pool		0.7	1.86
6	Pool	87.6	0.62	0.9
7	Pool		0.41	0.8
8	Pool		0.21	0.4
Observation	Dry	338.4	0	0
Maximum Observed Depth (ft.)			1.9	
Mean Assessment Reach Depth (ft.)			0.2	

Paris Branch at Shortline Rd.

Length of Assessment Reach (ft.)		500		
Transect (#)	Reach Type (Riffle, Pool, Run, Dry)	Type Length (ft.)	Mean Depth (ft.)	Maximum Depth (ft.)
1	Riffle	75	0.08	0.21
2	Riffle		0.11	0.22
3	Riffle		0.11	0.2
4	Pool	125	0.31	0.68
5	Pool		0.43	1.39
6	Pool		0.26	0.48
7	Run	50	0.26	0.5
8	Run		0.35	0.72
9	Run		0.60	1.21
10	Riffle	105	0.08	0.15
11	Riffle		0.13	0.25
12	Riffle		0.23	0.5
13	Pool	145	0.21	0.51
14	Pool		0.69	0.92
15	Pool		0.13	0.2
16	Pool		0.26	0.74
17	Pool		0.35	0.83

Maximum Observed Depth (ft.)	1.4
Mean Assessment Reach Depth (ft.)	0.3



"Cindy DiStefano "
<Cindy.DiStefano@mdc.mo.gov>

03/26/2008 11:34 AM

To "Michael Kruse" <michael.kruse@dnr.mo.gov>

cc

bcc

Subject Fwd: DNR Request - Sarah, Marv, Jen, Kenda

>>> Lynn Schrader 03/18/08 10:10 AM >>>
Gang,

With this note, I'll confirm that the latter observations were after 1975....especially since a couple of you reporting may not of even been born yet.

Would you guys confirm to Cindy the request for Stater, Brushy, and Bigelow creeks, please.

I know, I know.....the Clean Water Act says streams are suppose to be swimmable whether we actually saw someone or not. Cindy is doing her best for these.

Thanks,

Lynn

>>> Cindy DiStefano 3/14/2008 1:43 PM >>>
Lynn,

The following is a request received from DNR that I have edited to pertain to your region. I have included only the streams in your region and added page numbers that correspond to the page numbers on the map file. Hopefully, this information will be easy to obtain. If possible, I would like the information by March 26th, so I can meet DNR's deadline.

Email from Mike Kruse, DNR:

I am following up on conversations you previously had with Donna Menown regarding the letter of comments provided to us from John Hoskins and the MDC on 8/24/2005. The letter pertains to observations of whole-body contact recreation in streams we completed Use Attainability Analyses for in 2005. After reviewing the 2005 UAAs additional questions arose that we hope you may be able to answer. We greatly appreciate all your help on this matter.

After reviewing the UAAs available on-line, it became apparent that some of the surveys were completed in locations other than the streams in question. Since the comments in the letter from the MDC did not provide WBID numbers and the maps provided in the 2005 UAAs may not be entirely accurate, we cannot be certain those observations came from the correct streams. Would you be able to tell us if the following observations were indeed made on the correct stream segments and equally important if the observations occurred after 11/28/1975? I have attached maps and locations of the streams in question.

Stater Cr. (WBID 1850): public swimming observed - Crawford Co. - Page 6

Brushy Fk. (WBID 33): children playing and splashing observed - Lincoln Co. - Page 8

Bigelow's Cr. (WBID 1608): children playing and splashing observed -
St. Charles Co - Page 10

Additionally, the following list of streams is of those the MDC
observed WBCR, however we need confirmation the actions occurred after
11/28/1975.

Whittenburg Cr. (WBID 1899): public swimming observed - Crawford Co.
Birkhead Br. (WBID 34): children playing and splashing observed -
Lincoln Co.
Paris Br. (WBID 176): children playing and splashing observed -
Lincoln Co.
Turkey Cr. (WBID 199): public swimming observed - Lincoln Co.
Mill Cr. (WBID 2124): public swimming observed - Washington Co.

I will be at a meeting next week, so if you have questions please
contact Mike at:

Mike Kruse
Div. of Env. Quality/Water Protection Program
MO Dept. of Natural Resources, Jeff. City
(573) 522-4901; FAX [522-9920]
e-mail: michael.kruse@dnr.mo.gov

Thanks!
Cindy



Maps_UAA Kruse.doc